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Their Mistake, Our Lesson

For ten months last year, my participation in two cases as an expert witness provoked much introspection and contemplation. Both cases involved the same defendant for the same reason, although different plaintiffs initiated each suit. The action causing the damages was one that is likely to raise the hackles of many surveyors, but that was not the focus of my musings. Instead, the reason that the defendant found himself in such a mess was the reason for my interest, particularly in the manner that it applies to surveying.

The problem centered on a site that backs up to a creek. The structure on the site is a rambling series of connected warehouses, a single building due to the way the sections share roof trusses and other structural members. I walked inside these sections, from one leased area to another, and observed this first hand. This connected construction happened to be related to the suits, but the main source of the complaints was the floodplain originating from the creek running behind the building. A company whose sole activity was to check the Flood Insurance Rate Maps to determine whether or not that floodplain affected the structure reported that the building was not affected by the 1% annual chance floodplain. Therefore flood insurance was not mandatory, and a “regular” insurance policy was written instead of one specifically covering damages from floods. A few months later, one of the 1990’s great Mid-western floods hit. This was the basis of the two suits to recover about \$16 million in uninsured flood damages.

In the process of reviewing the report on the flood zone affecting the site and the few in-house records that were



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available so many years after that first determination had been made, I began thinking about the application of certain discoveries to our work as surveyors. The cause of the error on one of the flood zone determinations had been that an address database had been used to locate the property, resulting in a certificate issued for a site about two miles from the true location. The company stated that it had double-checked the address, using two different databases. However, during my investigations I found that both databases had roots in the same set of information, merely being distributed by different software companies. In essence,

the address had been compared to the same wrong data two times, yielding precision but not accuracy. (Remember those terms?)

If a single room has two doorways and I walk through each of those doorways looking for green apples, but the room only has red apples in it, I am still in the wrong place even though I was there two times. Do we trust the information yielded by our software when we balance traverses and process GPS data? Do we run the same program the same way twice to check ourselves? Or do we try two different approaches when we check ourselves, to be sure that we do not fall

into the trap of using the same (sometimes wrong) thought process as we used when we made our first calculations? This is the most basic form of quality control.

The documents in the defendant's files included copies of reduced plans that had been faxed to assist in ascertaining the location of the structure on the site for one of the flood zone determinations. The 8-1/2 x 11-inch faxed copy of a reduction of what used to be a much larger plan contained lettering that was fuzzy at best, but mostly just

plain blobby and illegible. It was not until one of the attorneys provided me with a full-sized copy, 30 x 42 inches, that I could decipher the date. At that point I realized that the plan had been almost 22 years old at the time that it was sent to the flood zone determination company. In searching the Internet for free aerial imagery, I had already found photographs of the area dated about the time of the determination. The building footprint was not the same. The change was in the rear of the

structure, closest to the flooding source. As it turned out, the structure had been in the floodplain even before expansion, but the new addition made the encroachment even more obvious.

This particular situation raises an important professional issue. Sometimes information that a client provides us should not be taken as the "best available" data. In this instance, the defendant unquestioningly used the miniaturized version of the drawing, the same one that I was unable to read clearly. My professional responsibility as a surveyor would have required me to refuse to utilize this plan, protecting my client from itself, despite the delay it would require.

Sifting through the company's files, I found that the computer printouts inconsistently identified when changes had been made to the flood certificates the company issued, sometimes stating what had been changed but not the date or source of the change, other times identifying the additional information that had been forwarded by a client but not what use had been made of it, although clearly it had been used since one certificate had been revised. The lack of regularity in the record keeping system allowed me to raise many questions of credibility.

In the end, "my" side won its millions in the settlement stage, as the defendant realized it could not adequately defend in court the procedural, quality control, and record keeping questions I had suggested to my attorney clients. But lessons are there for surveyors as well. And so I present the following food for thought.

How do we document what software and equipment we utilize, or the general procedures we follow in collecting, analyzing, and reporting information to our clients?

Do we update our research when we update a survey? Do we rely upon what the title company provides us as being current and complete? Is the adjoining survey the final word on where the common boundary is? Is the form we filled out to apply for a permit "good enough" to just photocopy and send in for renewal?

What is in our files, and what is missing? Is keeping records by computer notation sufficient?

What is the basis of the data sets we rely upon, and how carefully do we check that digital data?

Do we have a system for quality control? If so, how do we determine its efficacy, and what do we do if we find a problem? *AS*

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